MAGNETOMECHANICAL SYSTEM OF THE CAUSED RECOIL'S REDUCTION FROM A GUN'S BULLET FIRING.

The invention is referred to a magnetic-mechanic system of the recoil's power reduction, which is developed during the shooting time in a gun. The gun, as a mechanical system and as long a fired bullet crosses in it the distance from the gun-barrel's chamber till the gun-barrel's muzzle, functions as a system reaction like the motors reaction. But except from the gun's recoiled phenomenon because of the bullet's loading instantaneous firing in the chamber, the provoked explosion gives to the gun's frame an instantaneous dynamical energy, annihilating any inertia phenomenon, which was prevailing in the reference system between the gun and the user before the explosion.

In order to avoid the recoil phenomenon, the current technology of portable guns like the revolvers, automated pistols, submachine-guns and/or other heavy armor of which guns, the recoil systems bring in most cases an absorption spring, and in order to increase the gun - user reference system's inertia, they use different technical solutions, which nevertheless are restricted to small improvements in the present case, like:

1. Through the addition of a mercury bag to the gun's front section in order to cause vertical resultant, in order to increase the gun's inertia during the gun-barrel's rebound.
2. Through the gas escape from the gun-barrel's upper section with momentum and direction reverse of the gun's rebound during the shooting time.

The invention, which will be described, is referred to the creation of an absorption – reduction magnetomechanical system of this axial force, which generates the recoil and which is based, one the one hand, on a magnet's (M) presence, which in cooperation with successive recoil springs of the same or different diameter, with spirals or metal cutting, the acceleration and the deceleration of the slide's retrogression in a gun, and on the other hand, through the mechanical only method, where one of the (successive) springs (having the same axial or another axial arrangement level) and (in succession with the above-mentioned) participates in the movements' participation with time delay, since its edges do not adjoin from the beginning to reference points upon the gun, but after the firing of each bullet in it. The result of all this function is the biggest possible control of the gun's recoil.

Brief presentation of figures -1- and -2- of the suggestive solution.

In figure -1- the developmental force of recoil – retrogression absorption – reduction mechanism arrangement is presented and is consisted of the cylinder's (1) body of which the spring (5) is positioned externally, which cylinder is divided in two chambers, (A) and (B) through one contraction (Y), in which chambers, on the one hand, the pin (4) is inserted, and on the other hand, the springs (2) and (3), which are secured, on the one hand, from the transversal cover (6), and on the other hand, from the washer – separator (7), which is embodied with the pin (4). The separator (7) is the one pin's (4) edge through which edge, the pin is grounded with the gun's fixed section and in extent with its handle. The left pin's expansion (4) with the indication (P) penetrates the transversal cover (6), comes to the slide area (K) and is formed on a magnet's (M) support base, which is secured with the component (E) and of which the magnetic lines, on the one hand, pull the slide and on the other hand the cylinder (1) with a parallel course towards the exit of the gun's gun-barrel (R), while in figure -2-

the magnet (M) is supported on the base (9) because from the pin (4) the indication (P) is subtracted.

Figure -1- arrangement analysis.

The big exterior diameter of the cylinder's (1) body is coming through the spring (5) of which the one edge is based on the cylinder's wall (T), which is configured in a bigger diameter, and the other edge of it is based on the gun's slide (K). The pin (4) every now and then brings the separators (7) and (8), which designate, on the one hand, its axial course, and on the other hand, they operate as the recoil springs' points of reference.
The spring (2), entering the chamber (A) through the one edge, steps on the bulkhead's (Y) one surface and through the other edge to the pin's (4) separator (7).
During their installation, the springs (5) and (2) are under the minimum charge. The spring (3) is positioned in chamber (B) and is secured by the cover (6), but since it is lower than the chamber's height, during its initial positioning it isn't strained not even from the minimum initial charge, so the spring's (3) edges are in a distance, on the one hand, from the cover's (6) internal surface, and on the other hand, from the separator's (8) surface.

The system's operation during the bullet's firing time.

A time fraction before the firing, the springs (2) and (5) have the minimum charge in contrast with the spring (3), which is located in the chamber (B) under zero charge, since its edges do not osculate at any reference point, while the slide's (K) front views, on the one hand, towards the exit of the gun-barrel, and on the other hand, of the cylinder (1), are osculated with the magnet's (M) surface.

During the bullet's firing time, the deployed gases' pressure reaches the point, which is designated as critical for the magnet's pull over the slide only, where the slide (independent from the cylinder) places itself in motion with increased momentum, cuts the magnetic lines and starts to retrogress, pushing the spring (5), which acts over the cylinder (1). Nevertheless, on the one hand, the spring (2) because of bigger resistance, and on the other hand, because of the magnet's pulling force, do not permit the cylinder (1) to drift immediately to regression. So, the slide continues its regression until it bangs to the cylinder's point (S), which is configured in a bigger diameter.

On point (S), where the slide is met with the cylinder, any further spring's (5) compressing is interrupted, and as the bullet's gases continue to increase their pressure, they reach the point, where it is designated again as critical for the magnet's pull (this time) over the cylinder, where the slide's continuous regression sets also the cylinder (1) to regression, which diverges from the magnet. During this phase, the slide (K) after the spring (5) and the cylinder (1), regress as a uniform body, compressing the spring (2). Taking into account that the pin (4) is not moving towards any direction, and since the cylinder (1) increasingly regresses compressing also the spring (2), through the cover (6) increasingly minimizes the freedom degree the spring (3) has between the cover (6) and the separator (8). Until this time point, where the expansion takes place from the bullet's firing, which acts over the slide, only two springs take place as a retroaction system, since they are positioned successively, which means the (5) and the (2) operate as one. As long as the slide's regression continues with the decelerated movement therefore the cylinder's (1) also, and while the spring (2) almost approaches

by the 3/5 of the completion of its compressing, then the spring (3) acquires reference points tangential, on the one hand, with the cover (6), and on the other hand, with the separator (8). The increasingly slide's and cylinder's decelerated movement meets the spring (3) in total inertia, hence this absorbs instantaneously the most of the rest of the slide's energy, before the spring manages to enter to the absolute procedure of compressing. The result is to have an on the spot interruption of any further slide's regression and since the gases' expansion has comes upon from the firing, the chamber -slide- system begins to move in opposite direction, which means forwardly with the maximum acceleration. This is caused of the spring's (3) inertia condition, which acts as percussive mechanism against the slide with momentum and direction opposite the slide's regression, minimizing the recoil tension and time. The instantaneous delay, which comes from the magnet's presence, causes the gases' maximum expansion and gives bigger initial speed to the bullet, with the consequence of its trajectory's increase. It has also positive influence to the slide's axial displacements, since its tempering time to the initial position is reduced. Except the magnet's (M) pre-mentioned support method where through the pin's (4) body expansion, which penetrates the cover (6) and enters the slide's area, another magnet's support method is through the use of different stand-by points in the fixed places (frame), where all the guns have. In this case, through a respective formed base for each type of a gun, like the base (9) of figure -2-, which is embodied either with the fixed gun-barrel (K) or with any other gun's fixed point on which the magnet (M) is positioned, which pulls the cylinder (1) and the slide. In this case, the pin (4) doesn't need to be extended till the magnet, as this is depicted in figure -2-.

The system can function also without a magnet with only a mechanical way, with the assumption that there will not be imparted increased force to the bullet, therefore any bigger trajectory.

With the proper configuration of the invention's main attachments, like the cylinder's shape, the springs' force and the dimensions (while the spring (3) maintains the specifications of its freedom degree) and without the invention being expanded beyond its limits, the system will be possible to adapt itself to any gun type.